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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,853	08/03/2001	Jae-Hyuk Lee	P-242	6667
34610	7590	11/28/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			KUMAR, PANKAJ	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/920,853	Applicant(s) LEE, JAE-HYUK	
	Examiner Pankaj Kumar	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-20,22-35 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-9,11-20,22-26,28-35 and 37 is/are allowed.
- 6) ☒ Claim(s) 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's argument, filed 11/9/2005, with respect to the rejection(s) of claim 27 has been fully considered and is persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the following.

Response to Amendment

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiya USPN 5,752,171 in view of Ha USPN 6,240,144 and Carsello USPN 5,566,213

4. As per claim 27, Akiya teaches a determining an output level of a high power amplifier using a feedback digital output signal (Akiya fig. 1: 106, 107, detected RF level); computing a gain control signal for gain control (Akiya fig. 1: Gain control) by using the determined output level (Akiya fig. 1: 106, 107, detected RF level), a desired output level (Akiya fig. 1: 111, 112, setting data, vref), and a level of a digital input signal delayed for a prescribed period of time (not in Akiya but would be obvious as explained below); multiplying a current digital input signal by the gain control signal to control the level of the digital input signal; and maintaining a sign bit of a multiplication resulting value, taking remaining lower bits as a predetermined number of bits, and adjusting digits of the digital input signal before and after multiplication.

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5. Akiya does not teach a level of a digital input signal delayed for a prescribed period of time. Ha teaches a level of a digital input signal delayed for a prescribed period of time (Ha fig. 2: output of 100 is before D/A and delay in 106 used in power amplifier (Ha title) to adjust the amplification or gain). Thus, it would have been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at a level of a digital input signal delayed for a prescribed period of time as recited by the instant claims, because the combined teaching of Akiya with Ha suggest a level of a digital input signal delayed for a prescribed period of time as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Akiya with Ha because Akiya suggests controlling gain or amplification (something broad) in general and Ha suggests the beneficial use of controlling amplification by using digital input signal delayed for a prescribed period of time such as outing data corresponding to the input data (Ha col. 1 lines 62-63) in the analogous art of amplifier.

6. Akiya does not teach multiplying the current digital input signal by the gain control signal to control the level of the digital input signal; and maintaining a sign bit of a multiplication resulting value, taking remaining lower bits as a predetermined number of bits, and adjusting digits of the digital input signal before and after multiplication. Carsello teaches multiplying the current digital input signal by the gain control signal to control the level of the digital input signal (Carsello 5566213 fig. 2: 68); and maintaining a sign bit of a multiplication resulting value (Carsello fig. 2: after multiplication in 68, sign determined in 110), taking remaining lower bits as a predetermined number of bits (Carsello fig. 3b: various sections of bits), and adjusting digits of the digital input signal before and after multiplication (Carsello fig. 2: bits of the digital signal is adjusted before and after multiplication in 68). Thus, it would have

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been obvious, to one of ordinary skill in the art, at time the invention was made, to arrive at the multiplying the current digital input signal by the gain control signal to control the level of the digital input signal; and maintaining a sign bit of a multiplication resulting value, taking remaining lower bits as a predetermined number of bits, and adjusting digits of the digital input signal before and after multiplication as recited by the instant claims, because the combined teaching of Akiya with Carsello suggest multiplying the current digital input signal by the gain control signal to control the level of the digital input signal; and maintaining a sign bit of a multiplication resulting value, taking remaining lower bits as a predetermined number of bits, and adjusting digits of the digital input signal before and after multiplication as recited by the instant claims. Furthermore, one of ordinary skill in the art, would have been motivated to combine the teachings of Akiya with Carsello because Akiya suggests various calculations (such as Akiya counting up and down, +/- in 108) (something broad) in general and Carsello suggests the beneficial use of improving symbol decoding (Carsello: title) and not have false lock points (Carsello col. 1 lines 54-67) and reduce jitter (Carsello col. 1 lines 45-53) by calculating by multiplication as claimed in the analogous art of feeding back output with gain control.

Allowable Subject Matter

7. Claims 1, 3-9, 11-20, 22-26, 28-35, 37 are allowed.
8. See prior action(s) for details.

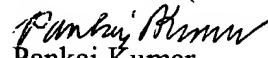
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Pankaj Kumar
Patent Examiner
Art Unit 2631

PK